

Amendment and Response

Serial No.: 09/847,942

Confirmation No.: 6169

Filed: 2 May 2001

For: PRESSURE SENSITIVE ADHESIVE FIBERS WITH A REINFORCING MATERIAL

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Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (Currently Amended) An adhesive nonwoven web comprising pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:
a pressure sensitive adhesive component; and
an organic polymeric reinforcing material comprising a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns within the pressure sensitive adhesive component;
wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.
2. (Previously Presented) The nonwoven web of claim 1 wherein the minimicrofibrous organic polymeric reinforcing material comprises substantially continuous in-situ formed minimicrofibers.
3. (Original) The nonwoven web of claim 1 which has an elongation at break of at least about 200% at a basis weight of about 55 g/m².
4. (Original) The nonwoven web of claim 1 which has a maximum load of at least about 50 g/cm at a basis weight of about 55 g/m².

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5. (Previously Presented) The nonwoven web of claim 1 which has a load at yield point of no greater than about 100 g/cm at a basis weight of about 55 g/m².

6. (Previously Presented) The nonwoven web of claim 1 comprising about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric reinforcing material.

7. (Previously Presented) The nonwoven web of claim 1 wherein the minimicrofibers have a diameter of no greater than about 5 micrometers.

8. (Previously Presented) The nonwoven web of claim 1 wherein the minimicrofibers have an aspect ratio of greater than about 1000.

9. (Previously Presented) The nonwoven web of claim 1 wherein the pressure sensitive adhesive component comprises synthetic rubber, styrene block copolymer, polyvinyl ether, poly(meth)acrylate, polyolefin, silicone, or combinations thereof.

10. (Previously Presented) The nonwoven web of claim 1 wherein the pressure sensitive adhesive component comprises a crosslinked acrylate copolymer, wherein the crosslinked acrylate copolymer comprises copolymerized monomers comprising at least one monoethylenically unsaturated alkyl (meth)acrylate monomer, at least one monoctylenically unsaturated free-radically copolymerizable reinforcing monomer having a homopolymer glass transition temperature higher than that of the alkyl (meth)acrylate monomer.

11. (Previously Presented) The nonwoven web of claim 10 wherein the crosslinked acrylate copolymer is derived from a melt-processable acrylate copolymer and a crosslinking agent, wherein the crosslinking agent crosslinks subsequent to fiber

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formation or is a thermally reversible crosslinking agent.

12. (Previously Presented) The nonwoven web of claim 11 wherein the crosslinking agent is a styrene macromer.

13. (Previously Presented) The nonwoven web of claim 10 wherein the alkyl (meth)acrylate monomer when homopolymerized has a glass transition temperature of no greater than about 0°C, and wherein the free-radically copolymerizable reinforcing monomer when homopolymerized has a glass transition temperature of at least about 10°C.

14. (Previously Presented) The nonwoven web of claim 10 wherein the pressure sensitive adhesive component comprises a polymer derived from at least one alkyl (meth)acrylate ester monomer; the group consisting of selected from isoctyl acrylate, 2-ethyl-hexyl acrylate, and n-butyl acrylate, and at least one monomer selected from the group consisting of acrylic acid and acrylamide.

15. (Previously Presented) The nonwoven web of claim 1 wherein the minimicrofibrous organic polymeric reinforcing material comprises an elastomer having a yield strength of no greater than about 20 MPa and a tensile strength of at least about 150% of the yield strength.

16. (Previously Presented) The nonwoven web of claim 1 wherein the minimicrofibrous organic polymeric reinforcing material comprises a semi-crystalline polymer.

17. (Currently Amended) An adhesive nonwoven web comprising pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:
a pressure sensitive adhesive component; and

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a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

18. (Previously Presented) The nonwoven web of claim 17 wherein the reinforcing material has a melting point above the use temperature of the fiber.

19. (Currently Amended) An adhesive nonwoven web comprising pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component comprising a crosslinked acrylate copolymer, wherein the crosslinked acrylate copolymer comprises copolymerized monomers comprising at least one monoethylenically unsaturated alkyl (meth)acrylate monomer, at least one monoethylenically unsaturated free-radically copolymerizable reinforcing monomer having a homopolymer glass transition temperature higher than that of the alkyl (meth)acrylate monomer; and

a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5

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weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

20. (Currently Amended) An adhesive nonwoven web comprising pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component; and

an organic polymeric reinforcing material within the pressure sensitive adhesive component, wherein the organic polymeric reinforcing material has a yield strength of no greater than about 20 MPa and an elongation at break of at least about 50%;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

21. (Cancelled)

22. (Previously Presented) An article comprising a surface having the adhesive nonwoven web of claim 1 disposed thereon.

23. (Previously Presented) An article comprising a surface having the adhesive nonwoven web of claim 17 disposed thereon.

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24. (Previously Presented) An article comprising a surface having the adhesive nonwoven web of claim 19 disposed thereon.

25. (Previously Presented) An article comprising a surface having the adhesive nonwoven web of claim 20 disposed thereon.

26. (Withdrawn - Currently Amended) An article comprising a substrate comprising at least one surface having an adhesive nonwoven web disposed thereon, wherein the adhesive nonwoven web comprises in-situ formed pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component; and

an organic polymeric reinforcing material comprising a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns within the pressure sensitive adhesive component;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

27. (Withdrawn) The article of claim 26 wherein the substrate is a release liner.

28. (Withdrawn) The article of claim 26 wherein the substrate is an extensible nonwoven web comprising fibers having at least two substantially continuous layers throughout the fiber length, wherein the layers comprise at least one first layer of a low

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modules material and at least one second layer of a relatively nonelastic higher modulus material capable of undergoing substantial permanent deformation.

29. (Withdrawn) The article of claim 28 wherein the layers of the fibers of the substrate are concentric.

30. (Withdrawn) The article of claim 28 wherein the layers of the fibers of the substrate are longitudinally layered.

31. (Withdrawn) The article of claim 28 wherein each fiber of the substrate comprises an outer sheath layer comprising the at least one first layer and at least one internal core layer comprising the at least one second layer.

32. (Withdrawn) The article of claim 31 wherein the outer sheath layer comprises a polyurethane.

33. (Withdrawn - Currently Amended) An article comprising a substrate comprising at least one surface having an adhesive nonwoven web disposed thereon, wherein the adhesive nonwoven web comprises in-situ formed pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component; and

a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web

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comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

34. (Withdrawn - Currently Amended) An article comprising a substrate comprising at least one surface having an adhesive nonwoven web disposed thereon, wherein the adhesive nonwoven web comprises in-situ formed pressure sensitive adhesive fibers, wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component comprising a crosslinked acrylate copolymer, wherein the crosslinked acrylate copolymer comprises copolymerized monomers comprising at least one monoethylenically unsaturated alkyl (meth)acrylate monomer, at least one monoethylenically unsaturated free-radically copolymerizable reinforcing monomer having a homopolymer glass transition temperature higher than that of the alkyl (meth)acrylate monomer; and

a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

35. (Withdrawn - Currently Amended) An article comprising a substrate comprising at least one surface having an adhesive nonwoven web disposed thereon, wherein the adhesive nonwoven web comprises in-situ formed pressure sensitive adhesive fibers,

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wherein the pressure sensitive adhesive fibers comprising:

a pressure sensitive adhesive component; and

an organic polymeric reinforcing material within the pressure sensitive adhesive component, wherein the organic polymeric reinforcing material has a yield strength of no greater than about 20 MPa and an elongation at break of at least about 50%;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fibers comprise about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fibers, and further wherein a nonwoven web comprising the pressure sensitive adhesive fibers and having a basis weight of about 55 g/m² has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

36. (Withdrawn) A tape comprising:

a backing having a first and second side; and

an adhesive nonwoven web of claim 1 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

37. (Withdrawn) A tape comprising:

a backing having a first and second side; and

an adhesive nonwoven web of claim 17 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

38. (Withdrawn) A tape comprising:

a backing having a first and second side; and

an adhesive nonwoven web of claim 19 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

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39. (Withdrawn) A tape comprising:

a backing having a first and second side; and

an adhesive nonwoven web of claim 20 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

40. (Original) A stretch removable article comprising the adhesive nonwoven web of claim 1.

41. (Original) A stretch removable article comprising the adhesive nonwoven web of claim 17.

42. (Original) A stretch removable article comprising the adhesive nonwoven web of claim 19.

43. (Original) A stretch removable article comprising the adhesive nonwoven web of claim 20.

44. (Original) A medical article comprising the adhesive nonwoven web of claim 1.

45. (Original) The medical article of claim 44 which is in the form of a wound dressing, surgical dressing, medical tape, athletic tape, or surgical tape.

46. (Original) The medical article of claim 44 which is in the form of a sensor, an electrode, or an ostomy appliance.

47. (Original) A medical article comprising the adhesive nonwoven web of claim 17.

48. (Original) A medical article comprising the adhesive nonwoven web of claim 19.

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49. (Original) A medical article comprising the adhesive nonwoven web of claim 20.

50. – 54. (Cancelled)